

REMARKS

The Applicant has received and reviewed the Office Action dated September 8, 2006 wherein the Office maintained the Office's rejection of Applicant's claims 1, 2, 5, 7-12, and 30-32 under U.S.C. 102(b) as being anticipated by the reference Bayley et al (Great Britain Patent No. 1,443,704); maintained the Office's rejection of Applicant's claims 3, 4, 6, 13-17, 20-29 and 33 under U.S.C. 103(a) as being unpatentable over the combination of the references of Bayley et al, Marsden et al. (U.S. Patent No. 2,469,883), Baranowski (U.S. Patent No. 3,561,193), and Kobayashi et al. (U.S. Patent No. 5,206,330); maintained the Office's rejection of Applicant's claims 18 and 19 under U.S.C. 103(a) as being unpatentable the combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. (U.S. Patent No. 6,413,429); and maintained the Office's rejection of Applicant's claim 34 under U.S.C. 103(a) as being unpatentable over the combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al.

Examiner's interview of December 14, 2006

Applicant's attorney and inventor Dr. Mathews J. Thundyil thank Examiner Drodge for the courtesy and time in granting an after final telephone interview on December 14, 2006 to discuss the claims and the cited art.

During the interview, Examiner Drodge stated that if the Applicant amended the claims to include the features of the extraction liquid droplets having sizes of less than 10 microns and the extraction liquid and the fluid having a specific gravity difference of as low as 0.01, that the aforementioned amendment to the Applicant's claims would result in the claims being

allowable over the currently cited art. Examiner Drodge further stated that the Applicant will need to file a Request for Continued Examination with the response as the present case is under a final rejection.

Accordingly, the Applicant has enclosed an executed PTO/SB/30 transmittal form for the filing of a Request for Continued Examination of the above-identified application under 37 C.F.R. 1.114 along with a credit card authorization form in the amount of \$395.00 in payment of the filing fee for the Request for Continued Examination with the present response. The Applicant qualifies for small entity status. Please charge any additional fees that may be due to Deposit Account 10-0210.

Rejection under 35 U.S.C. 102(b) to Bayley et al.

Applicant's claims 1, 2, 5, 7-12, and 30-32 stand rejected under 35 U.S.C. 102(b) as being anticipated by the reference of Bayley et al (Great Britain Patent No. 1,443,704).

In regards to Applicant's independent claims 1 and 30, per the Examiner suggestion during the Examiner's interview of December 14, 2006, the Applicant has canceled claims 7, 18, 21, and 31 and amended independent claims 1 and 30 to include the subject matter of canceled claims 7, 18, 21, and 31. More specifically, Applicant's independent claims 1 has been amended to now call for a process for the extraction of an unwanted liquid from a fluid that includes the step of:

“...introducing an immiscible extraction liquid into a fluid having an unwanted liquid therein to form a physical emulsion comprising a plurality of extraction liquid droplets under 10 micron in diameter suspended in the fluid;...” (Emphasis added.)

and the step of:

“... controlling a volume of the immiscible extraction liquid introduced into the fluid such that there is a specific gravity difference of as low as 0.01 between the larger droplets containing the unwanted liquid and the fluid; ...” (Emphasis added.)

Applicant's independent claims 30 has been amended to now call for a process for the extraction of an unwanted liquid from a fluid that includes the step of:

“... introducing an immiscible extraction liquid into a fluid having an unwanted liquid therein to form a physical emulsion comprising a plurality of extraction liquid droplets under 10 micron in diameter suspended in the fluid;...” (Emphasis added.)

and the step of:

“... controlling an amount of immiscible extraction liquid introduced into the fluid such that there is a specific gravity difference of as low as 0.01 between the larger droplets and the fluid; ...” (Emphasis added.)

Further support for the above amendment to independent claims 1 and 30 can be found for example on page 4, lines 4, lines 15-20; page 9, lines 1-2; and page 11, lines 8-10 of the Applicant's disclosure. The Applicant respectfully submits that the reference of Bayley et al. does not teach the features of providing for “...liquid droplets under 10 micron in diameter...” or a specific gravity difference of as low as 0.01 between the larger droplets and the fluid as called for in Applicant's amended independent claims 1 and 30. Note for example

that the reference of Bayley et al. on page 5, column 2, lines 84-88 specifically states that "... the dispersed phase will have a droplet size of means diameter greater than 100 microns."

(Emphasis added.)

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claims 1 and 30, as amended, are allowable over the reference of Bayley et al.

Rejection under 35 U.S.C. 103(a) to combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al.

Applicant's claims 3, 4, 6, 13-17, 20-29 and 33 stand rejected under U.S.C. 103(a) as being unpatentable over the combination of the references of Bayley et al, Marsden et al. (U.S. Patent No. 2,469,883), Baranowski (U.S. Patent No. 3,561,193), and Kobayashi et al. (U.S. Patent No. 5,206,330). Applicant's claims 18, 19, and 34 stand rejected under U.S.C. 103(a) as being unpatentable the combination of the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. (U.S. Patent No. 6,413,429).

In regards to Applicant's independent claim 13, Applicant's independent claims 13 has been amended to now call for a process for the extraction of an acid from a fluid that includes the step of:

"... forming a stable physical emulsion comprising a plurality of polar liquid droplets under 10 micron in diameter dispersed through out the fluid, said polar liquid droplets attractable to the acid in the fluid through a polar interaction to form a plurality of polar liquid acid droplets;..." (Emphasis added.)

and the step of:

“... controlling an amount of water added to the fluid such that there is a specific gravity difference of as low as 0.01 between the plurality of larger droplets containing the acid and the fluid; ...” (Emphasis added.)

In regards to Applicant's independent claims 28, 33, and 34, Applicant's independent claim 28 has been amended to now call for a process for the extraction of an acid from a fluid including of the step of:

“... forming a stable emulsion comprising a plurality of water droplets under 10 micron in diameter dispersed throughout the silicone fluid stream, ...” (Emphasis added.)

and the step of:

“... controlling the volume of water added such that there is a specific gravity difference of as low as 0.01 between the larger water-acid droplets and the silicone fluid;...” (Emphasis added.)

Applicant's independent claim 33 has been amended to now call for a process for the extraction of an acid from a fluid including of the step of:

“... forming a stable emulsion comprising a plurality of water droplets under 10 micron in diameter dispersed throughout the silicone fluid stream, ...” (Emphasis added)

and the step of:

“...controlling an amount of immiscible extraction liquid introduced into the fluid such that there is a specific gravity difference of as low as 0.01 between the larger droplets and the fluid; ...” (Emphasis added.)

Applicant’s independent claim 34 has been amended to now call for a process for the extraction of an acid from a fluid including of the step of:

“...forming a stable emulsion comprising a plurality of water droplets under 10 micron in diameter dispersed throughout the silicone fluid stream,...” (Emphasis added)

and the step of:

“...controlling the volume of water added such that there is a specific gravity difference of as low as 0.01 between the larger water-acid droplets and the silicone fluid; ...” (Emphasis added.)

Support for the above amendment to independent claims 13, 28, 33, and 34 can also be found for example on page 4, lines 4, lines 15-20; page 9, lines 1-2; and page 11, lines 8-10 of the Applicant’s disclosure.

The Applicant respectfully submits that the combination of the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al., and the combination of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. do not make Applicant’s independent claims 13, 28, 33, and 34, as amended, obvious as a review of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. et al. reveal that the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. each do not teach “liquid droplets under 10 micron in diameter” or “a specific

gravity difference of as low as 0.01 between the larger droplets and the fluid...” as called for in Applicant’s amended independent claims 13, 28, 33, and 34.

Note for example that the reference of Bayley et al., on page 5, column 2, lines 84-88, specifically teaches droplet sizes of greater than 100 microns. Further note that the reference of Breman et al. in column 1, lines 10-20 and in column 7, lines 20-30 specifically requires a specific gravity difference of at least 0.05 or 5 % in order to separate Breman’s fluids.

Since the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. each do not teach the above features of Applicant’s amended independent claims 13, 28, 33, and 34, the Applicant respectfully submits that their combination also does not teach the above features of Applicant’s independent claims 13, 28, 33, and 34, as amended.

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claims 13, 28, 33, and 34, as amended, are allowable over the combination of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al.

In further regards to the Office’s rejection of Applicant’s claims 3, 4, 6, 13-29 and 33-34, on page 5, lines 9-13 of the Office Action dated September 8, 2006, in further support of the Office’s above rejections, the Office stated:

“..., Marsden et al at column 4, lines 52-75 teaches removing of residual sulfuric acid from silicone manufacturing, by contacting the silicone with a solvent or water, or a mixture of water and hydrocarbon solvent to form an emulsion or dispersion containing droplets, followed by coalescing the droplets, ...”

The Applicant respectfully disagrees with the Office's above statement. It is noted that the Applicant's review of column 4, lines 52-75 of the reference of Marsden reveals the teaching of the addition of an emulsifying agent comprising polyoxyalkylene derivative of sorbitan monopalmitate to an acid/silicone mixture comprising sulphuric acid and octamethyltetrasiloxane in order to increase the rate of reaction leading to the formation of a gum. It is noted however that the Applicant's review of column 4, lines 52-75 of the reference of Marsden failed to reveal the teaching of the use of water to form an emulsion or dispersion an acid/silicone mixture.

On page 5, lines 13-15 of the Office Action dated September 8, 2006, the Office stated:

“... Kobayashi et al teach removing of residual sulfuric acid in the manufacture of silicone, by processes comprising contacting with a large volume of water (Abstract, column 3, lines 13-37).”

The Applicant respectfully submits that Kobayashi et al's above use of water does not make the Applicant's claim use of water obvious. Note that Kobayashi et al's abstract calls for “washing” Kobayashi et al's reaction mixture with “a large volume of water” after the separation stage of the reaction mixture. Applicant's claims 3 and 4 calls for the introduction of an extraction liquid in to a fluid having an unwanted liquid therein and Applicant's claim 6 calls for the introduction of an extraction liquid comprising water droplets in to a fluid having an unwanted liquid therein. The Applicant respectfully submits that Kobayashi et al's disclosure of the use of “a large volume of water” to wash Kobayashi et al's reaction mixture after the separation stage of the reaction mixture teaches away from the Applicant's

introduction of an extraction liquid in to a fluid having an unwanted liquid therein of claims 3 and 4 and Applicant's introduction of an extraction liquid comprising water droplets in to a fluid having an unwanted liquid therein claim 6.

On page 5, lines 15-20 and page 6, lines 1-2 of the Office Action dated September 8, 2006, the Office stated:

“Baranowski teaches removing of impurities in an emulsion/droplet form that includes acids that are dispersed in a liquid phase that may comprise silicone, by a process including coalescing (column 1, line 27-column 2, line 18 and column 3, lines 30-35). The teaching references also suggest polar interaction of contaminants and solvents such as certain oils, since acid contaminants may be associated with water contaminant (see, for instance, Baranowski at column 1, line 64-column 2, lines 15-18).

The Applicant respectfully disagrees with the Office's above statement. It is respectfully submitted that the Applicant's review of column 1, line 64-column 2, lines 15-18 of the reference of Baranowski failed to reveal the teaching of polar interaction as noted by the Office. The Applicant respectfully submits that Baranowski's disclosure in column 1, lines 64-68 of a laundry list potential contaminants is not a sufficient disclosure to suggest the teaching of polar interaction as held by the Office.

In further regards to the Office's rejection of Applicant's claims 3, 4, 6, 13-29 and 33-34, in *ACS Hospital Systems, Inc. v. Montefiore Hospital*, the CAFA held:

“Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the

combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so.¹ (Emphasis added.)

In view of *ACS Hospital Systems, Inc. v. Montefiore Hospital*, the Applicant respectfully submits that it would not have been obvious to combine the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. to produce the invention of Applicant's claims 3, 4, 6, 13-29 and 33-34 as the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. fail to provide any such suggestion or incentive to combine them in the manner cited by the Office in support of the Office's rejection of Applicant's claims 3, 4, 6, 13-29 and 33-34.

The Applicant also further disagrees with the Office's combination of the references of Bayley et al, Marsden et al., Baranowski and Kobayashi et al., and of the references of Bayley et al, Marsden et al., Baranowski, Kobayashi et al. and Breman et al. in support of the Office's rejection of Applicant's claims 3, 4, 6, 13-29 and 33-34 as the aforementioned references teach away from their combination. For example, note that the reference of Baranowski teaches:

“...a process for the purification of oils such as transformer oils, lubricating oils, and hydraulic oil which are contaminated with water, air, gases, and solid particles.”
(Column 1, lines 27-30.)

That is, the reference of Baranowski is directed to the removal contaminants from Baranowski's fluid (oil) supply. Note for example in column 3, lines 30-35 wherein

¹ See *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 USPQ 929, 933 (CAFA 1984).

Baranowski calls for the use of a filter-separator 11 “... to coalesce and remove substantially all of the free water contained in the oil.” (Emphasis added.)

The reference of Kobayashi teaches the opposite of the reference of Baranowski by calling for a method for the preparation of an organopolysiloxane such as silicone fluid that includes the addition of a supply of water to Kobayashi’s fluid (mixture of organosiloxane oligomers) supply to hydrolyze an acid residue bonded to the organopolysiloxane molecules. (Column 3, lines 13-16 of Kobayashi.)

Since the references Baranowski and Kobayashi against their combination, the Applicant respectfully submits that it would not have been obvious to combine the references Baranowski and Kobayashi et al. to the references of Bayley et al, Marsden et al., and to the references of Bayley et al, Marsden et al., and Breman et al. to reject Applicant’s claims 3, 4, 6, 13-29 and 33-34.

It is for the above reasons that the Applicant respectfully submits that it would not have been obvious for one of ordinary skill in the art to combine the references of Bayley et al, Marsden et al., Baranowski Kobayashi et al., and Breman et al. in the manner cited by the Office in support of the Office’s rejection of Applicant’s claims 3, 4, 6, 13-19, 20-29 and 33-34.

In further regards to Applicant’s claims 2-12, 14-27, 29, and 31-32, Applicant’s dependent claims 2-6 and 8-12 each depends on Applicant’s independent claim 1 and Applicant’s dependent claim 14-17, 19-20, and 22-27 each depends on Applicant’s independent claim 13.

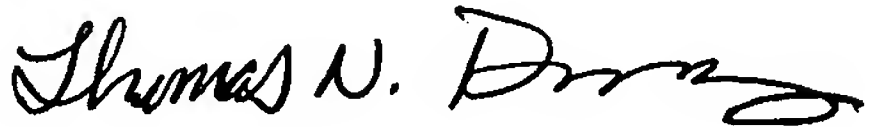
Since Applicant's independent claim 1 and Applicant's independent claim 13, as amended, are allowable for the reasons given above, Applicant's dependent claims 2-6 and 8-12 and 14-17, 19-20, and 22-27 should also be allowable. Applicant's dependent claim 29 depends on Applicant's independent claim 28 and Applicant's dependent claim 32 depends on Applicant's independent claim 30. Since Applicant's independent claims 28 and 30, as amended, are allowable for the reasons given above, Applicant's dependent claim 29 and 32 should also be allowable.

In view of the above, it is submitted that the application is in condition for allowance. Allowance of claims 1-6, 8-17, 19-20, 22-10, and 32-34, as amended, is respectfully requested. Applicant has enclosed a version of the amendment showing changes made with this response. Please charge any additional fees to Deposit Account 10-0210.

A response to the Office Action for the present case was due on December 8, 2006. The Applicant hereby petitions for a one-month time extension up to and including the date of January 8, 2007 to file the response. The Applicant has enclosed a petition form PTO/SB/22 form and a credit card authorization form in the amount of \$60.00 for payment of the time extension fee. The Applicant qualifies for small entity status. Please charge any additional fees that may be due to Deposit Account 10-0210.

Respectfully submitted,

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Enclosure